



Solar Photovoltaic Rebates

Rebate Levels and Availability

Alameda Municipal Power (AMP) is offering \$4.2 million in rebates over 10 years, from 2008 through 2017, in support of customers that install solar photovoltaic (PV) systems that meet AMP’s engineering criteria for system interconnection. Residential and commercial projects with a system rated capacity smaller than 50 kilowatts (CEC-AC) are eligible for an up-front rebate based on the system rated capacity. Commercial projects with a system rated capacity greater than or equal to 50 kilowatts are eligible for a performance-based incentive (PBI), paid quarterly over 5 years, that is dependent on the actual output of the system. The table below lists the rebate level for the up-front rebate and PBI for each year remaining in the program.

Year	Budget	For projects < 50 kW _{CEC-AC}		For projects ≥ 50 kW _{CEC-AC}	
		Up-front Rebate (\$/W)	Residential Set-aside kW	Performance-Based Incentive (\$/kWh)	Max kW Available
2010	\$420,000	\$2.42	50	\$0.27	62
2011	\$420,000	\$2.25	50	\$0.26	137
2012	\$420,000	\$2.09	50	\$0.24	151
2013	\$420,000	\$1.95	50	\$0.22	165
2014	\$420,000	\$1.81	50	\$0.21	182
2015	\$420,000	\$1.68	50	\$0.19	200
2016	\$420,000	\$1.57	50	\$0.18	218
2017	\$420,000	\$1.46	50	\$0.17	238

Rebates will be made available to all residential and commercial customers on a first-come, first-served basis for placement in the rebate queue. However, 50 kW per year will be reserved for residential applicants. If, by the end of a calendar year, the residential program is undersubscribed and the PBI program is oversubscribed, the unused residential funds will be allocated to the PBI program for that calendar year. Funds earmarked for future years may be allocated to customers in advance, although actual payment of such funds will not be made until the future year when the funds are made available during AMP’s budget process. Unused funds from any year’s budget of \$420,000 will remain available for future funding at that future year’s rebate level.

All rebate amounts will be effective for 180 days from the approval date of the customer’s AMP rebate application. If a customer has not proceeded with the PV installation within 180 days of application approval, the approved rebate amount will be made available to other customers. The customer may reapply after the 180 days has expired.

System Requirements

Consistent with AMP’s “Net Energy Metering” tariff (Rider NEM), the solar PV installation must not exceed a capacity of 1,000 kW and must be sized to meet no more than 110% of one customer’s estimated load. One customer is defined as the load being served by one meter. PV systems receiving



Solar Photovoltaic Rebates

rebates must also comply with State-established standards, which include optimum orientation and tilt of panels, acceptable shade analysis results, certification of equipment and installers, and system warranties. In addition, all program participants will be required to undergo a free AMP energy efficiency audit, accept the terms and conditions contained in AMP's *Interconnection and Purchase Agreement for Net Energy Metering*, and obtain necessary building permits from the City of Alameda.

Special Considerations

On behalf of all its customers/ratepayers who are funding the rebate program, AMP will retain ownership of all renewable energy credits (RECs) from the electricity generated during the first 10 years of a solar system's operation. However, the customer may choose to purchase these RECs from AMP for a fixed \$60 per megawatt-hour (MWh) during the 10-year period. The proceeds from REC sales will be used to benefit all Alamedans under the guidance of the Public Utilities Board (PUB), in areas such as increasing the PV rebate amounts beyond the \$4.2M target and enhancing AMP's Green Portfolio. The PUB may also implement alternative payment methods that capture the \$60/MWh REC value for all Alamedans.

Only permanently installed systems that are intended to be in place for the duration of their useful life are eligible for AMP's solar PV rebates. A PV system owner must notify AMP at least 60 days prior to any change in ownership or system location if the change occurs within 10 years of the original interconnection. If a customer receives an up-front rebate for a solar system and then removes the system within 10 years, the customer may install the system within 6 months of removal at another site in AMP's service territory without forfeiting any of the rebate. AMP will conduct a mandatory site inspection upon reinstallation. If the customer does not install the system within 6 months of removal at another site in AMP's service territory, the customer must return the rebate to AMP prorated over 10 years. For example, if the system was interconnected for 5 years, the customer must return half of the up-front rebate.



Solar PV Checklist

Date Completed	Sequential Steps	Notes
_____	1. Energy audit	Call AMP at (510) 748-3947 to schedule required free energy audit.
_____	2. PV rebate application	Submit <ul style="list-style-type: none">• completed rebate application• 2 Interconnection Agreements with original signatures• AMP utility bill• copy of homeowner's insurance policy• contract w/installer/system owner/retailer• copy of system warranty• shading analysis• system drawing AMP will review application and notify customer and installer of estimated rebate if application is approved.
_____	3. Building permit	Upon receiving rebate approval from AMP, obtain building permit from City of Alameda (application materials available at City Hall). To check status of permit application, go to www.ci.alameda.ca.us/planning and click on Permit Manager.
_____	4. Panel inspection	Upon receiving building permit, call AMP Engineering at (510) 748-3996 to schedule pre-installation panel inspection.
_____	5. System installation	Construction must commence within 180 days of rebate application approval.
_____	6. Electrical inspection	Upon completion of system, call Central Permits Office at (510) 747-6830 to schedule final electrical inspection.
_____	7. Interconnection	Then call AMP Engineering at (510) 748-3996 to schedule system interconnection.
_____	8. Rebate check	AMP will issue rebate check to party specified on rebate application.



Solar PV Rebate Application

INSTRUCTIONS

1. **AMP Customer Information:** Provide required customer information, including street address where system will be installed and AMP account number for existing customers.
2. **Installer Information:** If customer intends to install the system, check “AMP Customer” box. If not, provide required installer information, including California license class (e.g. C-10, electrical or C-46, solar), and license number. A minimum 10-year warranty is required for all systems. Installers must be registered with the California Energy Commission (CEC) to be eligible for rebate (list of registered installers available at www.gosolarcalifornia.ca.gov/database/search-new.php).
3. **System Owner Information:** Provide system owner information if different from AMP customer.
4. **Generating System:** It may be useful for the customer to review the general discussion of system specifications and installation guidelines at www.energy.ca.gov/reports/2001-09-04_500-01-020.PDF.
 - a. **PV Modules:** Enter the manufacturer's name, model number, watts per module as reported by the CEC, and quantity of photovoltaic modules in the system. The CEC maintains a list of eligible modules and their “PVUSA Test Conditions” (PTC) ratings on its website at www.gosolarcalifornia.ca.gov/equipment/pvmodule.html.
 - b. **Inverters:** Enter the manufacturer's name, model number, and efficiency (as reported by the CEC) of the inverter(s) in the system. The CEC maintains a list of eligible inverters and their efficiency ratings at www.gosolarcalifornia.ca.gov/equipment/inverter.php. Check the appropriate box based on whether or not the inverter has a built-in performance meter.
5. **System Rated Capacity and Energy Production:** Multiply the PTC watts per module, quantity of modules, and inverter efficiency to calculate the total AC system capacity upon which the rebate will be based. Fill out the orientation and incline angles for the installation. Acceptable efficiency ranges for orientation and incline are listed in the table to the right (N/A denotes unacceptable combinations). Enter estimated energy production in kilowatt-hours and indicate calculation methodology (e.g. CSI EPBB, PV Watts, or specify if other). This value should take into account shading derates.

	Slope	Flat	4:12	7:12	12:12	21:12
Direction	Degrees	0	13	30	45	60
S	180	0.89	0.97	1.00	0.97	0.89
SSE, SSW	158, 203	0.89	0.97	0.99	0.96	N/A
SE, SW	135, 225	0.89	0.96	0.96	0.93	N/A
ESE, WSW	113, 248	0.89	0.92	0.91	N/A	N/A
E, W	90, 270	0.89	N/A	N/A	N/A	N/A
6. **Installed System Cost:** Enter total cost of the system, including equipment and installation, before rebate.
7. **Rebate:** If the system rated capacity (CEC-AC watts) calculated in section 5 is less than 50 kW, multiply the capacity by the up-front rebate rate for the applicable year to calculate the expected rebate. If the system rated capacity is greater than or equal to 50 kW, multiply the estimated annual energy production by 5 years and the performance-based incentive (PBI) for the applicable year to calculate the total expected rebate. Check the box indicating to whom AMP will pay the rebate. If not the AMP customer, copies of contracts with other parties must be provided.
8. **Other:** Fill out the date on which the required energy audit was performed. Also indicate whether or not the customer wants to purchase renewable energy credits (RECs) from AMP for a period of ten years (see page 2).
9. **Attachments:** In addition to the completed application form, submit the following documents:
 - a. Copy of all contracts between customer and installer, system owner, and/or retailer
 - b. Copy of installer warranty
 - c. AMP utility bill or printout of usage from eCare (existing customers only)
 - d. Two original signed copies of the Interconnection Agreement for Net Metering
 - e. Shading analysis (e.g. www.solarpathfinder.com or site photos depicting no shading)
 - f. System PV drawing to be submitted with city building permit application
 - g. Copy of customer’s homeowner or business liability insurance policy coverage

Upon approval of a rebate application, the customer has 180 days to proceed with the PV installation.



Solar PV Rebate Application

1. AMP Customer Information (Physical Site of Installation) Residential Commercial Municipal

Name _____ Email _____
Installation Address _____ Alameda, CA 9450__
AMP Account # _____ Phone _____ Fax _____

2. Installer Information AMP Customer Other Installer (shown below)

Company Name _____ Contact Name _____
Address _____
Phone _____ Fax _____ Email _____
Contractor Class _____ License # _____ Expires _____
Installer Warranty 10-year Other _____

3. System Owner Information (if different from AMP customer above)

Company Name _____ Contact Name _____
Address _____
Phone _____ Fax _____ Email _____

4. PV System (see www.gosolarcalifornia.org/equipment/index.html)

Module Manufacturer	Module Model #	CEC-DC Watts/Module	Quantity
_____	_____	_____	_____
Inverter Manufacturer	Inverter Model #	Efficiency	Quantity
_____	_____	_____	_____

Inverter includes performance meter? Yes No

5. System Rated Capacity and Energy Production

CEC-DC Watts/Module x Quantity of Modules x Inverter Efficiency = System Rated Capacity
_____ x _____ x _____ = _____ Watts AC

Orientation (between 90°E and 270°W) _____° Tilt/Incline (0° to 60°) _____°
Estimated Annual Energy Production _____ kWh/year (includes any shade derates)
Methodology Used EPBB PV Watts Other _____

6. Installed System Cost

Total cost of system (without rebate) \$ _____

7. Rebate

If the system rated capacity is less than 50 kW, the system is eligible for an up-front rebate:

System Rated Capacity x Up-front Rebate = Estimated Rebate
_____ kW x \$ _____ / kW = \$ _____

If the system rated capacity is greater than or equal to 50 kW, the system is eligible for a performance-based incentive (PBI), paid out over 5 years on a quarterly basis, based on actual metered generation:

Estimated Annual Energy Production x 5 years x PBI = Estimated Rebate
_____ kWh / year x 5 years x \$ _____ / kWh = \$ _____

Pay Rebate To: (If not customer, copy of contracts with other parties must be provided)

AMP Customer Installer System Owner Retailer



Solar PV Rebate Application

8. Other

Energy Audit Completed On _____ Customer Purchase of RECs from AMP Yes No

9. Attachments (required)

- Contract w/Installer/System Owner/Retailer
- Copy of Installer Warranty
- AMP Utility Bill
- Interconnection Agreement for Net Metering
- Shading Analysis
- System Drawing
- Copy of Insurance Policy Coverage

AGREEMENT

Each of the Undersigned declares under penalty of perjury that:

- 1) Information provided in this form is true and correct to the best of my knowledge,
- 2) The PV system is intended to offset no more than the AMP Customer's estimated load at the site of the installation,
- 3) Site of the installation is located within Alameda Municipal Power's service territory,
- 4) Customer's intent is to operate the system at the listed site of installation for its useful life.

AMP Customer Signature: _____ Date: _____

System Owner Signature: _____ Date: _____
(If different from Customer)

Please mail or deliver your rebate application to:

Delivery

Alameda Municipal Power
Solar Electric Rebate Program
2000 Grand Street
Alameda, CA 94501

Mail

Alameda Municipal Power
Solar Electric Rebate Program
P.O. Box H
Alameda, CA 94501

For AMP use only

Energy Audit: Date _____

Application Received: Date _____

Application Approved: By _____ Date _____

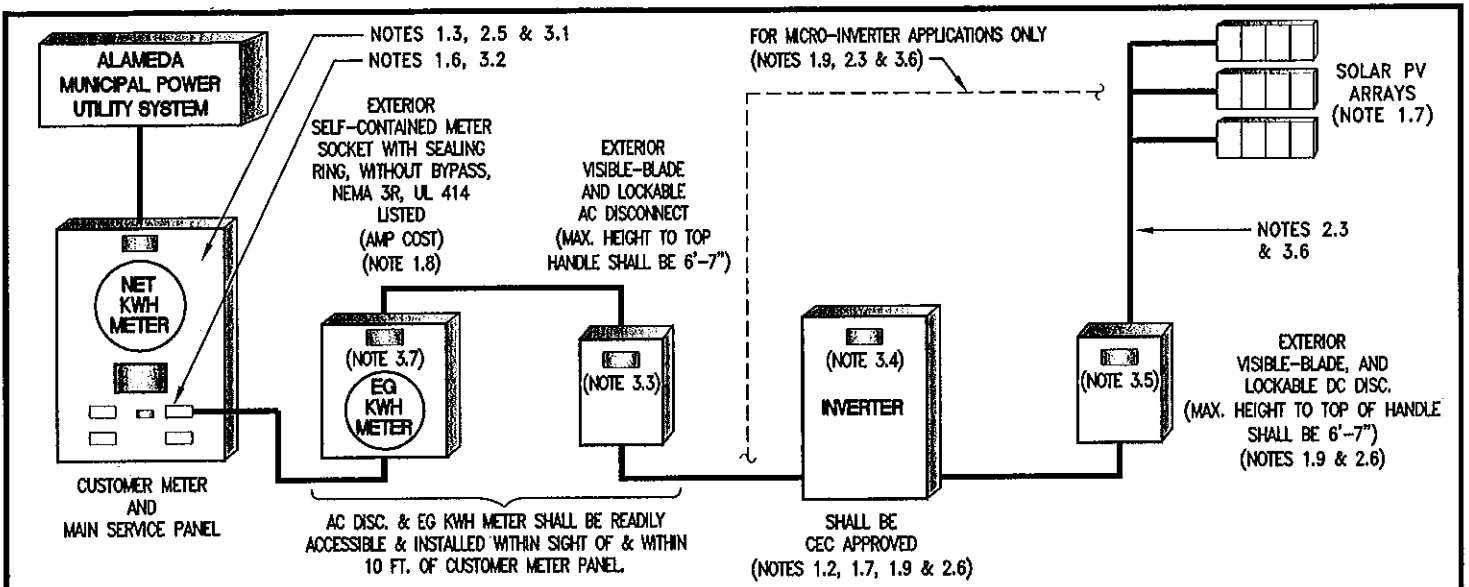
Panels Inspected: By _____ Date _____

System Interconnected: By _____ Date _____

IA Sent to City Attorney: Date _____

IA Signed by AMP: Date _____

PV Rebate Check Issued: Amount \$ _____ Date _____ Check No. _____

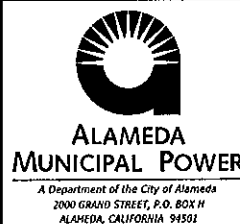


BLOCK DIAGRAM SOLAR PV INSTALLATION

1.0 GENERAL NOTES:

- 1.1 ALL EQUIPMENT AND INSTALLATION SHALL MEET ALL APPLICABLE PROVISIONS OF THE FOLLOWING STANDARDS: UL STANDARD 1703, IEEE 929-2000, AND UL STANDARD 1741.
- 1.2 ALL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH ALAMEDA MUNICIPAL POWER'S (AMP'S) INTERCONNECTION AND PURCHASE AGREEMENT FOR NET ENERGY METERING, AMP'S RULES AND REGULATIONS, ALAMEDA ELECTRICAL CODE, CALIFORNIA ELECTRICAL CODE, NATIONAL ELECTRICAL CODE ARTICLE 690, CALIFORNIA STATE FIRE MARSHAL REGULATIONS, AND CALIFORNIA ENERGY COMMISSION'S (CEC) NEW SOLAR HOME PARTNERSHIP (NSHP) OR CALIFORNIA PUBLIC UTILITIES COMMISSION'S (CPUC) CALIFORNIA SOLAR INITIATIVE (CSI) LISTS OF ELIGIBLE EQUIPMENT.
- 1.3 IF THE EXISTING ELECTRICAL METER IS NOT CAPABLE OF MEASURING THE FLOW OF ELECTRICITY IN TWO DIRECTIONS, THE CUSTOMER SHALL BE RESPONSIBLE FOR ALL EXPENSES INVOLVED IN PURCHASING AND INSTALLING A NET KWH METER THAT IS ABLE TO MEASURE ELECTRICITY FLOW IN TWO DIRECTIONS.
- 1.4 CUSTOMER SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE SOLAR PHOTOVOLTAIC SYSTEM INSTALLATION INCLUDING ALL AMP'S COSTS THAT ARE RELATED TO THE PROJECT.
- 1.5 CUSTOMER SHALL OBTAIN A CITY OF ALAMEDA ELECTRICAL PERMIT.
- 1.6 SOLAR PHOTOVOLTAIC SYSTEM SHALL TERMINATE ON ITS OWN AC BREAKER IN THE MAIN SERVICE EQUIPMENT EXCLUSIVELY.
- 1.7 CUSTOMER SHALL CONTACT AMP AT (510) 748-3996 AS SOON AS THE SOLAR PV MODULES AND INVERTER(S) ARRIVE AT THE JOB SITE TO SCHEDULE A PRE-INSTALLATION INSPECTION. THE LIST OF ELIGIBLE PV EQUIPMENT CAN BE FOUND AT WWW.GOSOLARCALIFORNIA.COM/EQUIPMENT/INDEX.HTML.
- 1.8 METER SOCKET INSTALLATION SHALL BE SUBJECT TO AMP'S APPROVAL. METER HEIGHT SHALL BE 48" MIN. AND 66" MAX. WHEN INSTALLED NEAR DRIVEWAY, METER HEIGHT SHALL BE 72" MIN. AND NOT MORE THAN 75".
- 1.9 THE DC DISCONNECT AND THE INVERTER AT GRADE LEVEL WILL NOT BE REQUIRED IF MICRO-INVERTER TECHNOLOGY IS PROPOSED ON THE SOLAR PV MODULES.
- 1.10 AMP RESERVES THE RIGHT TO WITNESS THE FUNCTIONAL TESTS OF THE SOLAR PHOTOVOLTAIC SYSTEM INSTALLATION. THE CUSTOMER SHALL NOTIFY AMP AT LEAST 5 DAYS PRIOR TO THE ESTABLISHED DATE OF INSPECTION OR TESTING.
- 1.11 APPROVAL FOR PARALLEL OPERATION WITH AMP'S DISTRIBUTION SYSTEM IS SUBJECT TO SUCCESSFULLY MEETING ALL REQUIREMENTS BY THE CITY'S BUILDING SERVICES DEPARTMENT AND AMP.
- 1.12 CUSTOMER SHALL SUBMIT DETAILED INFORMATION ON THE INVERTER TO VERIFY UL 1741 COMPLIANCE. THE CUSTOMER INVERTER SHALL HAVE THE FOLLOWING MINIMUM SPECIFICATIONS FOR PARALLEL OPERATION WITH AMP'S ELECTRIC DISTRIBUTION SYSTEM:
 - INVERTER OUTPUT SHALL AUTOMATICALLY DISCONNECT FROM AMP'S UTILITY SOURCE UPON LOSS OF UTILITY VOLTAGE AND SHALL NOT BE RECONNECTED UNTIL THE UTILITY VOLTAGE HAS BEEN RESTORED.
 - INVERTER SHALL AUTOMATICALLY DISCONNECT FROM AMP'S UTILITY SOURCE WITHIN 2 CYCLES (33ms) IF THE UTILITY VOLTAGE FLUCTUATES BEYOND $\pm 10\%$.
 - INVERTER SHALL AUTOMATICALLY DISCONNECT FROM AMP'S UTILITY SOURCE WITHIN 3 CYCLES (50ms) IF THE UTILITY FREQUENCY FLUCTUATES ± 1 CYCLE (16ms).
 - INVERTER OUTPUT DISTORTION SHALL MEET THE IEEE 519 STANDARDS.

REV	DESCRIPTION	BY	DATE
0	NEW DRAWING	AC	04/15/08
1	REQUIRED PERFORMANCE METER	AC	05/12/08
2	REVISED NOTES 1.2, 1.3 1.7, 1.9, 2.3, 2.5 & 3.0	AC	06/17/08
3	REMOVED EMER. DC DISC. & ADDED MICRO INVERTER OPTION	AC JU	12/11/08
4	CHANGED NAME TO ALAMEDA MUNICIPAL POWER	AC	04/30/09



TITLE :		SINGLE METER SOLAR PV INSTALLATION NET METERING (UP TO 10KW)	
DRAWN :	<i>msb/2008</i>	DATE: APRIL 30, 2009	DWG. NO. :
REVIEWED:	<i>[Signature]</i>		1-L-578
APPROVED:	<i>[Signature]</i>		REV. 4
SCALE : NTS		SHT <u>1</u> OF <u>2</u>	

2.0 INSTALLATION REQUIREMENTS:

- 2.1 THERE WILL BE A MINIMUM OF 36" WALKING SPACE AROUND THE PERIMETER OF SOLAR ARRAYS INSTALLED ON ROOFS.
- 2.2 GROUND MOUNTED SOLAR ARRAYS WILL BE ERECTED IN AREAS CLEAR OF COMBUSTIBLE VEGETATION. A MINIMUM VEGETATION CLEARANCE OR MOWED PERIMETER OF 10" SHALL BE MAINTAINED.
- 2.3 ALL SOLAR CONDUITS, INTERIOR OR EXTERIOR, SHALL BE PERMANENTLY LABELED WITH FADE RESISTANT MATERIAL AS SHOWN IN 3.6. THIS LABEL SHALL BE INSTALLED EVERY 20'. FOR VERTICAL CONDUIT, A MINIMUM OF ONE LABEL SHALL BE AFFIXED AT EYE LEVEL.
- 2.4 BATTERY STORAGE IN ENCLOSED ROOMS TO BE MOUNTED A MINIMUM OF 24" ABOVE FLOOR. IF CONTAINED WITHIN CABINET, A PERMANENT PLACARD IS TO BE POSTED.
- 2.5 PERMANENT PLACARD SHALL BE INSTALLED ON EXTERIOR OF MAIN ELECTRICAL PANEL AS SHOWN IN 3.1.
- 2.6 ALL DISCONNECTS SHALL BE ACCESSIBLE TO AUTHORIZED REPRESENTATIVES OF THE CITY OF ALAMEDA. THE NET KWH METER, AC DISCONNECT, EG KWH METER, INVERTER AND DC DISCONNECT SHALL BE LOCATED TOGETHER WHEN POSSIBLE.
- 2.7 THE MAXIMUM LENGTH OR WIDTH OF THE SOLAR ARRAY SHALL NOT EXCEED 100 FEET.

3.0 LABELING REQUIREMENTS

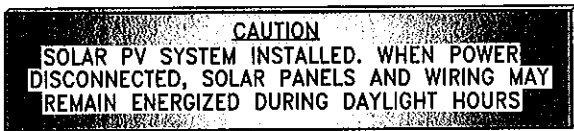
LABELS SHALL HAVE A RED BACKGROUND WITH REFLECTIVE WHITE LETTERING AND SHALL BE FADE-RESISTANT. LETTERS SHALL BE 1/4-INCH MINIMUM. ALL LABELS SHALL BE PERMANENTLY INSTALLED ON EQUIPMENT.

LABEL LOCATION AND LABELING:

3.1 ELECTRIC PANEL (NOTE 2.5)



AND



3.2 ELECTRIC PANEL PV BREAKER. LETTERS MAY BE REDUCED TO 1/8-INCH MINIMUM IN HEIGHT AND INSTALLED IN THE MAIN ELECTRICAL PANEL, ADJACENT TO THE BREAKER.



3.3 AC DISCONNECT



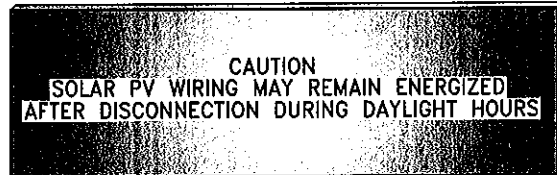
3.4 INVERTER



3.5 DC DISCONNECTS (NEAR INVERTER)



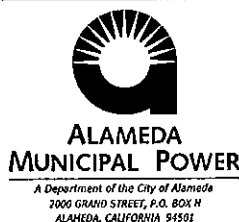
3.6 CONDUITS (NOTE 2.3)



3.7 ENERGY GENERATED (EG) METER



REV	DESCRIPTION	BY	DATE
0	NEW DRAWING	AC	04/15/08
1	ADDED LABEL 3.8	AC	05/12/08
2	REVISED NOTES 1.2, 1.3, 1.7, 1.9, 2.3, 2.5 & 3.0	AC	06/17/08
3	REMOVED EMER. DC DISC. & CHANGED WHITE TO RED BACKGROUND LABELS	AC JU	12/11/08
4	CHANGED NAME TO ALAMEDA MUNICIPAL POWER	AC	04/30/90



TITLE : SINGLE METER SOLAR PV INSTALLATION NET METERING (UP TO 10KW)			
DRAWN :	<i>reynold/LVA</i>	DATE: APRIL 30, 2009	DWG. NO. : 1-L-578
REVIEWED:			REV. : 4
APPROVED:	<i>gmu</i>		SCALE : NTS SHT <u>2</u> OF <u>2</u>

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**PRELIMINARY SINGLE METER SOLAR PV INSTALLATION NET METERING
(UP TO 10 KW) PLANNING SHEET**

Project Name: _____
 Location: _____
 Electrical Consultant or Applicant Completing Form: _____
 Address: _____ Telephone No.: _____
 Tentative Date of Parallel Operation of the Solar PV installation with the Utility System: _____

BUILDING AND METERING INFORMATION

- Number of Meters in the Building: _____
- Customer Meter Number: _____

SOLAR PV EQUIPMENT INFORMATION


- PV Modules (per UL Standard 1703):
 Orientation (90°E to 270°W): _____; Tilt/Incline (0° to 60°): _____
 Model #: _____; Rating (Watt/Module): _____; No. of Modules: _____
 No. of Strings of Modules: _____; String Protection: Yes; No
- Inverter (per UL Standard 1741); Micro-Inverter: Yes; No
 CSI/NSHP Listed; Outdoor (NEMA 3R or better); Indoor (NEMA 1 or better)
 Model: _____; Size (Watts): _____; Efficiency (%): _____
 Output Rating (Watts): _____; Volts: _____; Amps: _____; %THD _____
 Includes Performance Meter: Yes; No
- PV Energy Storage Subsystem: None: _____; Battery: _____; UPS: _____.
- AC Lockable Disconnect Rating: _____ Amps; Knife Blade; Fused Switch; OR Breaker
- PV Breaker Rating in Main Electrical Srvc Panel: _____ Amps
- Main Panel Busbar Rating: _____ Amps
- DC Lockable Disconnect Rating: _____ Amps; Knife Blade; Fused Switch; OR Breaker
- EG Meter Socket (for AMP Supplied Meter) with _____ Jaws
 Sealing Provisions: Yes; No
- Warning Labels and Equipment Compliance (per AP&T Standard Drawing 1-L-578): Yes; No

OTHER REQUIRED INFORMATION

Cost Breakdown for Meter Socket Installation Submitted to Alameda Municipal Power: Yes; No
 Drawing Submittals: Site Plan & System Layout; 1-Line or 3-Line Diagram;
 Equipment data and/or Cut-sheets; Other: _____
 Alameda Municipal Power Interconnection and Purchase Agreement Yes; No
 City of Alameda Electrical Application Permit Number: _____

NOTE: Alameda Municipal Power intends to use this form for preliminary job planning.
 The service equipment will also have to be inspected and approved by the City's Electrical Inspector, (510) 748-4634, and the Alameda Fire Department, (510) 337-2120, before it can be energized.

ALAMEDA FIRE DEPARTMENT

	Subject: Solar Photovoltaic Systems Standard – Residential Only	Standard Number 07-002
	Approved By: Fire Chief David Kapler	Page 1 of 7
	Refer To: Fire Marshal Michael Fisher	Effective Date: March 25, 2010
	Policy Review Date:	Revised Date: March 25, 2010

Fire Prevention Standards

The Alameda Fire Department (AFD) has developed a standard of conditions to ensure firefighter and public safety for all solar Photovoltaic (PV) systems. The AFD appreciates the environmental friendly technologic advances these systems bring. However, traditional firefighting techniques such as roof venting, water extinguishment and fire overhaul will have to be modified to ensure human safety. Roofs that contain solar arrays will be most difficult for firefighters to vent. Delayed roof venting may increase the time factor in fire containment resulting in a greater extent of fire damage overall. Additional roof loading by PV systems may also cause the roof integrity to be compromised sooner during fire conditions. Conventional water extinguishment on roofs with solar PV systems may not be an option for firefighters if the integrity of any portion of the solar array is threatened, as the risk of accidental electrocution is greatly increased. Fire overhaul will also be a challenge for firefighters, as broken panels or compromised solar conduit will remain energized during daylight hours or when illuminated by lights.

The following conditions will apply to all roof and ground mounted solar PV systems:

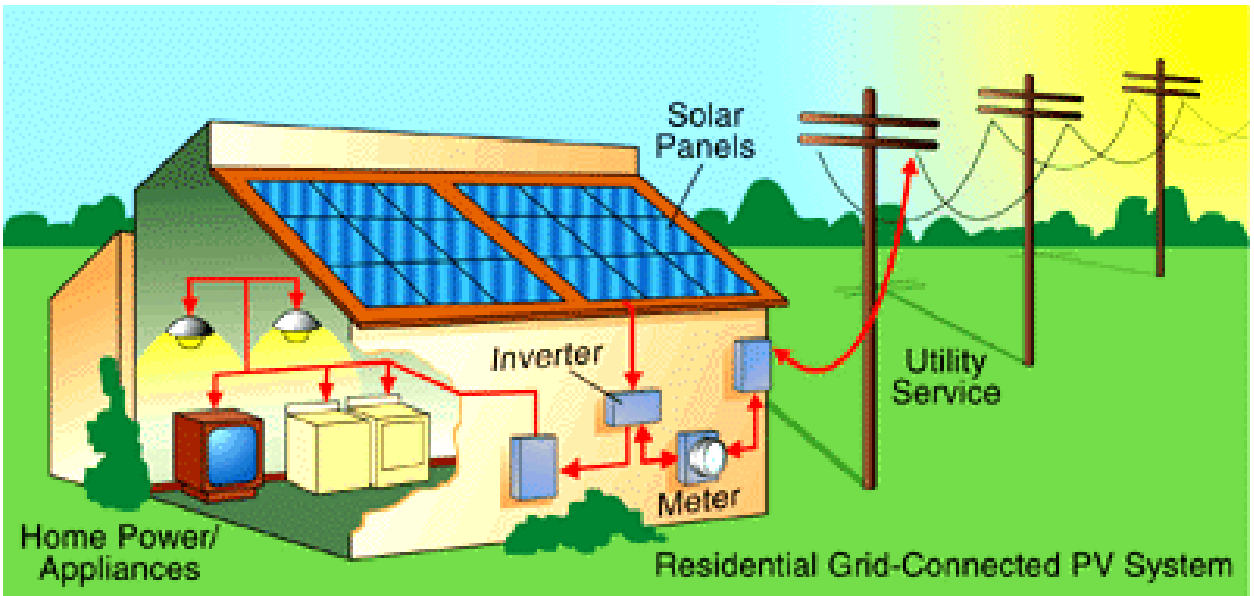
1. There will be a minimum of 36” of walking space around the perimeter of solar arrays installed on roofs.
2. Ground mounted solar arrays will be erected in areas clear of combustible vegetation. A minimum vegetation clearance or mowed perimeter of 10’ shall be maintained.
3. All solar conduits, interior or exterior, will be permanently labeled with fade resistant material as follows: “CAUTION Solar PV Wiring May Remain Energized After Disconnection During Daylight Hours.” (See attached signage requirements.)
4. Battery storage in enclosed rooms to be mounted a minimum of 24” above floor. If contained within cabinet, a permanent placard is to be posted.
5. Permanent placard installed on exterior and interior of main electrical panel stating: “CAUTION Solar PV System Installed. When Power Disconnected, Solar Panels And Wiring May Remain Energized During Daylight Hours.”
6. All disconnects shall be accessible to fire department and located together when possible.
7. The maximum length or width shall not exceed 100 feet.

I have read the above safety concerns involved in the installation of a solar PV system and understand the conditions

Signed by _____

Date _____

Print Name _____



SIGNAGE REQUIREMENTS FOR SOLAR PV SYSTEMS

Two forms of signage are required for solar PV systems. Permanently affixed labels should have a white background with reflective red lettering. Printed material should resist fading. Size of lettering should be equal to the example below.

1. Exterior /Interior Conduit Signage:

To be installed every 20'. For vertical conduit, a minimum of one label to be affixed at eye level.

CAUTION
**Solar PV Wiring May Remain Energized
After Disconnection During Daylight Hours.**

2. Exterior/Interior of Electrical Panel Signage:

CAUTION
**Solar PV System Installed. When Power Disconnected,
Solar Panels And Wiring In Conduit To Inverter May
Remain Energized During Daylight Hours.**